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MANUFACTURING-PLANT FOOD SERVICES AS MARKETS FOR FISH AND SHELLFISH

SPECIAL SCIENTIFIC REPORT–FISHERIES No. 343

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

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MANUFACTURING-PLANT FOOD SERVICES
AS
MARKETS FOR FISH AND SHELLFISH

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ABSTRACT

This report identifies and examines the market for fish and shellfish afforded the fishing industry by the food services maintained by manufacturing establishments for their employees. Important differences in the use of fish and shellfish are found, depending on number of employees, location of plant, species of fish, type of product, and other factors. Other points covered include buying practices, inventories, and availability of freezer space.

ACKNOWLEDGEMENTS

This report is based on a survey of manufacturing-plant food services for employees conducted by the Marketing Services Company, a division of Dun and Bradstreet, Inc., under contract to the U. S. Department of Agriculture. The Fish and Wildlife Service made special arrangements with the Department of Agriculture to have the survey broadened to cover fishery products. Because of certain difficulties encountered by the contractor, completion of the survey was delayed. In addition, the Fish and Wildlife Service had agreed not to release the data until the Department of Agriculture published its reports. Careful examination of the data leaves no doubt that, while the survey period was for 4 weeks in January and February of 1956, the results are pertinent to the current situation. The report was prepared for publication by DeVora R. Alexander, Commodity Industry Analyst. Funds made available by the Saltonstall-Kennedy Act, approved July 1, 1954 (68 State. 376) were used to finance the coverage for fishery products.

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MANUFACTURING-PLANT FOOD SERVICES AS MARKETS FOR FISH AND SHELLFISH

INTRODUCTION

Almost 6,000 manufacturing plants with 250 or more employees--more than half of all such plants in the country--main tain food facilities, such as cafeterias, restaurants, or other means of serving hot foods to employees. The larger plants, with a thousand or more employees, generally have regular food services while only a third of the plants with 250 to 499 employees have such facilities. The purpose of this report is to examine and identify the market opportunities these facilities may afford the fishing industry in general, and distributors of fishery products in particular.

Self-service cafeterias are operated by 75 percent of the plants. Large plants make greater use of cafeterias and restaurants than do smaller companies (with fewer than 500 workers). The latter group makes considerable use of mobile food carts and canteen operations.

Almost all plants serve a lunch. Two-thirds of the plants serve a second meal--frequently a breakfast or a dinner. Seven percent of the food services are open continuously. In a "typical" plant about half of the employees eat meals daily at the plant food service facilities.

Two out of three factory restaurant services are contractor-operated and there is some evidence of a trend from company operation to contractor operation. In many instances--even when the food services are nominally on a break-even or profit basis--rent, utilities, and other operating expenses are not charged to the facility itself. About 60 percent of the plants with company-operated facilities directly subsidized their food services by making up the difference between receipts and expenditures. About a third of the plants whose facilities are leased to a concessionaire either guarantee a minimum profit, or have a cost-plus-fixed-fee arrangement with the contractor.

A report (Employee Food Services in Manufacturing Plants 1/) published in 1959 by the Marketing Research Division, Agricultural Marketing Service, U. S. Department of Agriculture, presents information on the market manufacturing plants provide for food products. It contains data on kinds of plants that are included, types of facilities offered, management appraisals of food services, attitudes toward company versus contractor management of such services, financial arrangements, purchasing practices, and appraisals of suppliers.

A summary of the preliminary findings including comprehensive data in tabular form, by major category and for numerous individual food items, on expenditures for, and use of food in manufacturing-plant food facilities will be found in Buying Practices and Food Use of Employee Food Services in Manufacturing Plants 2/, published in 1959 by the Marketing Research Division, Agricultural Marketing Service, U. S. Department of Agriculture.

1/ Marketing Research Report No. 325, Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C., 50 cents a copy.

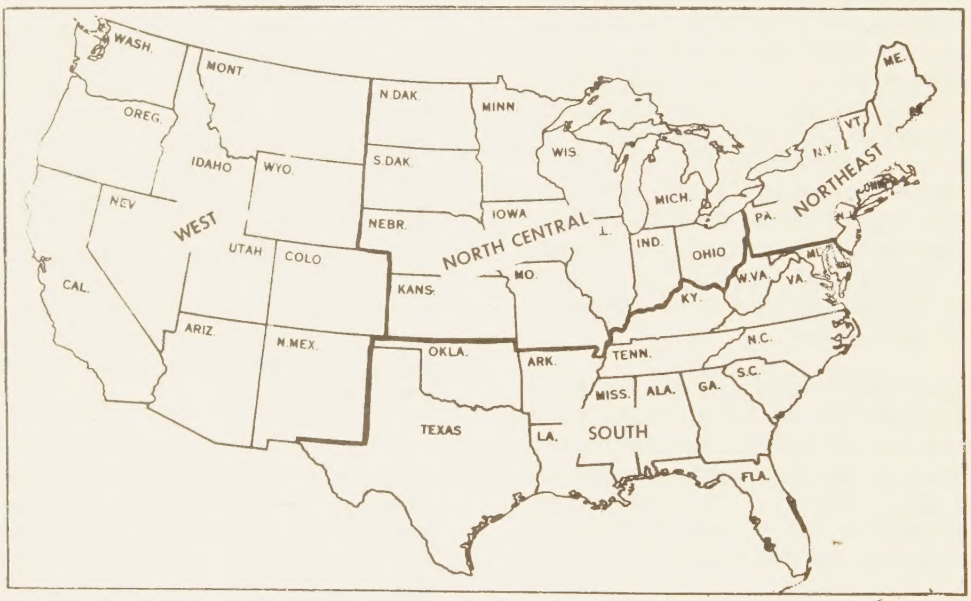
2/ Marketing Research Report No. 326, Superintendent of Documents, U. S. Government Printing Office Washington 25, D.C., 75 cents a copy.

SUMMARY

Fishery products accounted for 884,000 pounds, or 8 percent, worth $455 thousands, of the 10.7 million pounds ($4.9 million worth) of poultry, meat, and fish used in manufacturing-plant food services during the 4-week survey period in January and February 1956.

The combined quantity of poultry, meat, and fish items accounted for 11 percent of the total of almost a hundred million pounds of food used during the survey period and for 25 percent of the dollar value of about twenty million dollars.

Some fish or shellfish was used in 85 percent of the plants during the survey period. All 85 percent used fish while only 52 percent used shellfish. The lowest incidence of use (75 percent) was found in the South.



Areas used in survey

Northeastern and north-central plants formed the bulk of the market for fish and shellfish (35 and 42 percent, respectively), while southern plants used 18 percent and those in the West only 5 percent.

Plants with a thousand or more employees used 70 percent of all the fish and shellfish sold to factory food services, with medium-sized firms accounting for 21 percent, and small companies 9 percent. Contractor or catered operations used slightly more fishery products than company-run facilities.

On a pound basis, the use of fish accounted for 77 percent of all fishery products used and shellfish for 23 percent. However, shellfish comprised 32 percent of the dollar expenditure. Of the total pounds of fish used in the 4-week period, frozen items made up the largest part--44 percent. A little more than 25 percent each was fresh and canned. There were wide differences according to region, plant size, and form of operation.

More plants (73 percent) used canned fish than other forms. Almost half served frozen fish and about a third used fresh fish. While about a fourth of all plants used shellfish in each of its forms, i.e., fresh, frozen, and canned, there were marked geographic differences.

The plants used an average of 151 pounds of fishery products during the survey period, broken down between 116 pounds of fish and about 35 pounds of shellfish. Of the total, 49 pounds were fresh, 62 pounds frozen, approximately 38 pounds canned, and less than 2 pounds were cured. If only plants which actually used these commodities were considered, the average

was 175 pounds for all fishery products.

Use per plant during the 4-week period ranged from under 40 pounds of fish and shellfish to more than 1,500 pounds, depending largely on the size of the plant. Individual fish and shellfish items used by the average plant in quantities of more than 10 pounds each during the 4 weeks were: fresh and frozen haddock--21 pounds, about evenly divided between fillets and whole or dressed; fresh and frozen cod--15 pounds of which about 11 pounds were fillets and 4 pounds whole or dressed; canned tuna--15 pounds; canned salmon--13 pounds; fresh and frozen ocean perch fillets--12 pounds; and fresh and frozen shrimp--12 pounds.

The survey findings established that most plants bought fish and shellfish from one type of supplier. Foremost among the various types of sources were the so-called secondary wholesalers mentioned as sources by almost 8 out of 10 plants. Retailers, primary wholesalers, processors, and canners were cited as sources of lesser importance. A majority of plants purchased from a single firm.

Once-a-week buying of fishery products was the most common frequency of purchase with 63 percent of the plants reporting a 1-week interval between orders. Personal inspection was rated as most important in buying fresh fish and shellfish. About one plant in five bought on the basis of brand names. With both frozen and canned fish and shellfish, however, brand name was the most telling consideration. Almost one-fourth of the buyers of frozen fish made personal inspection and a few used written specifications.

The usual quantity of fishery products bought varied significantly by species, product, and by size of plant. Average quantities purchased at one time ranged from 14 pounds of peeled shrimp to 35 pounds of cod.

The price also varied substantially by species and by product. In general prices tended to be lowest in the South and highest in the West. Also, small plants--a relatively greater percentage of which dealt with retailers--were more likely to pay higher prices than large plants.

Inventories at the beginning of the 4-week survey period showed a total of 435,000 pounds of fish and shellfish on hand in the factories providing food services. Three-fourths of this inventory was canned, 19 percent frozen, 5 percent fresh, and 1 percent cured, smoked, dried, or kippered. Based on the normal rate of use, the fresh items were only enough for immediate use. Frozen fish and shellfish inventory was adequate for 5 days--slightly under the average work week of 5.5 days. Canned items, which keep and which are advantageously bought in large quantities, were found in amounts ample for just under 5 weeks for canned shellfish, and more than 6 weeks for canned fish.

The above data were averages for all plants, whether any inventory was present or not. Actually, only 11 percent of the plants had supplies of fresh fish; only 6 percent had fresh shellfish. Thirty percent had a stock of frozen fish; half that many had frozen shellfish. At least 7 out of 10 plants, in all regions except the South, had inventories of canned fish.

Detailed results of the survey appear in tables 1 to 17, pages 11 to 26. The methods used in conducting the survey are contained in the Appendix, beginning with page 27.

USE OF FISHERY PRODUCTS

Fish and shellfish in one form or another are served in 85 percent of the plants providing food services for employees. Use of fishery products in those plants in the 4-week survey period in January-February 1956 amounted to 884,067 pounds, valued at $454,957. Over three-fourths of the total was used in the Northeast and the North Central States.

Plants with more than a thousand employees each accounted for 70 percent and medium-sized firms for 21 percent of the fishery products used. Contractor operations used slightly more than company-run facilities.

While 85 percent of the plants studied used fish, only 52 percent used shellfish. The coastal regions (Northeast and West) had greater proportions of users of both fish and shellfish than other

sections. The South had the fewest plants serving fish, but that region was on a par with North Central States in using shellfish.

Almost all large plants (97 percent) used fish as compared with only three-fourths of the small firms. Furthermore, less than half of the plants with less than a thousand employees used shellfish, whereas 70 percent of large plants reported the use of that commodity. More company-run than leased operations served both fish and shellfish.

The average plant used 151 pounds of fishery products in the survey period. Fish accounted for the larger portion--116 pounds as against approximately 35 pounds of shellfish. Northeastern firms averaged more shellfish than both the north central and southern plants combined, but their use of fish was less than that in North Central States.

Large plants with more than a thousand employees used, on the average, three times as much fish and shellfish as did medium-sized plants. Compared with small plants, the large ones used six times as much fish, and nine times as much shellfish. Expenditures averaged $77.55 per plant during the 4-week survey period, of which $52.82 went for fish and $24.73 shellfish.

In line with their greater use, northeastern plants averaged considerably higher expenditures for shellfish than other regions, and only $5 less than north-central plants for fish. In company-operated facilities, the average use--both in pounds and dollars, and for both fish and shellfish--ran well ahead of that in leased services.

TYPES OF PRODUCTS

Fish

In 4 weeks, 682,000 pounds of fish (fresh, frozen, canned, and cured), worth $310,000 were used in manufacturing plant food service facilities. Distribution by geographic area, plant size, and type of operation was very similar to that of fish and shellfish combined, since fish comprised 77 percent of the joint volume in pounds.

Frozen fish accounted for a little less than half the total use of fish; fresh and canned each amounted to slightly more than one-fourth of the volume while smoked, cured, dried, or kippered fish formed a negligible proportion.

More plants used canned fish than any other fishery product. Almost half used frozen fish; about a third, fresh fish; and 4 percent used cured or smoked.

Only 58 percent of southern plants used canned fish, as against 73 percent in the North Central States, and more than 80 percent in the Northeast and West. The Northeast was the only section in which fewer than half the plants served frozen fish, but more of the firms in that region used fresh fish. The South was the lowest, proportionately, in the use of fresh fish.

Company operations used canned fish to a considerably greater extent than contractor-run services, but the margin of use was not quite so pronounced in fresh or frozen forms.

Of the 116 pounds of fish used in the average plant, 51 pounds was frozen, with most of the remainder divided between fresh and canned.

Southern and western plants averaged smaller amounts of fresh fish than did the northeastern or north-central plants. Heaviest use of frozen fish (64 pounds) was in the north-central region; lightest (37 pounds) in the West. Northeastern and north-central plants used more canned fish (40 and 34 pounds) than did western and southern plants (24 and 18 pounds, respectively).

Large companies averaged about 2-1/2 times as much of fresh and frozen fish as canned products. Small plants used as much canned fish as fresh and frozen combined, with the result that while they used only an eighth as much fresh, and a tenth as much frozen fish as the big plants, they actually used a third as much in canned form.

Company-run facilities averaged more of each form of fish than leased services.

Fresh and Frozen Fish.--Of the total 489,216 pounds of fresh and frozen fish,

used in manufacturing food facilities in the 4-week survey period, about one-fourth was haddock. Cod and ocean perch accounted for 18 percent and 14 percent, respectively, of the total. Other major species used were halibut, flounder or sole, pike, salmon, and swordfish.

In the Northeast, a third of the plants used haddock; 16 percent used flounder and 13 percent used cod. All other species were specified by fewer than 10 percent of the plants.

First in use in north-central plants was cod (26 percent mentioned using this species), followed by haddock (22 percent), ocean perch (21 percent), and halibut (14 percent).

Ocean perch was used by 28 percent of the southern plants, haddock by 23 percent, and cod by 15 percent.

In the West, 27 percent of the plants used fresh or frozen halibut, 16 percent used flounder or sole, 16 percent salmon, 11 percent haddock, and 10 percent used fish sticks.

Large plants evidenced a greater variety in their use of fish than did medium-sized or small plants. Among the plants with 250-499 employees, haddock was the only species mentioned by more than 10 percent. Of the plants with 500-999 employees, 25 percent used haddock, 17 percent ocean perch, 15 percent cod, and 10 percent fish sticks.

Company operations showed more diversity in the kinds of fish served than did contractor services.

Only about 13,000 pounds of fresh fish were found in plant inventories or enough to last 1-1/2 days. Western and north-central plants had more than 2 days' supply of fresh fish on hand at the beginning of the survey period. Large plants and contractor operations also were supplied with enough to last almost 2 days.

The 63,271 pounds of frozen fish on hand was enough for 4.6 working days--a little less than the average working week. All areas, except the north central, had more than a week's supply. Company-run facilities had greater inventories than leased operations. Although large plants had 9 times as much in actual poundage as the small plants, the latter had relatively more supplies on hand, i. e., 6.5 days as against 4.6 days for large plants.

Two out of 5 users had no frozen fish in inventory, but those plants still consumed a third of the total volume of this type of product during the 4 weeks. Among those that had any frozen fish at the beginning of the survey, the median average for the most usual quantity fell between 24 and 25 pounds.

Three-fourths of the plants had 0° F. freezer space for storing fish and other frozen foods. A significantly higher incidence was found in the larger plants--85 percent of which reported that 0° F. freezer space was available--than in the medium and smaller plants, of which 72 and 67 percent, respectively, reported the availability of such space.

In the Northeast, about two-thirds of the plants serving food had 0° F. freezer space, while in the rest of the country approximately 8 out of 10 plants were able to accomodate frozen foods.

On the average, the amount of 0° F. freezer space available ran around 21 cubic feet. This varied, however, from 10 cubic feet in small plants, to 18 cubic feet in medium-sized operations, to 37 cubic feet in companies with one thousand or more employees. In the latter group, one in five plants actually had more than one hundred cubic feet of 0° F. freezer space.

About half the frozen fish used in the survey period was in the 44 percent of plants having from 11 to 50 cubic feet of 0° F. freezer space. More than a fifth of the total volume was used by plants (13 percent) with freezer capacities of one hundred or more cubic feet. The 49 percent of plants with from 1 to 25 cubic feet of freezer space used a third of the total frozen shellfish, while the 21 percent of companies with one hundred or more cubic feet capacity used 37 percent of the total.

Over 70 percent of the plants which had freezer space reported that it was sufficient for their needs. The majority

of medium-sized plants were satisfied with their current freezer space, but almost one-half (45 percent) of the large plants with 11 to 25 cubic feet of freezer space and 35 percent of the small plants found their space inadequate.

About 1 plant in 5 expected to increase its freezer capacity in the next year or two, while 7 in 10 would keep it at the same level.

Plans to increase freezer space were reported by 28 percent of the smaller plants, by 18 percent of the large plants, and by 10 percent of the medium-sized plants. A greater proportion of plants in the Northeast planned to increase freezer space (27 percent did) than did plants in the South, North Central and West.

Canned Fish.--Almost half of the 183,430 pounds of canned fish consumed in the survey period was tuna. Salmon, with 76,416 pounds used in the same 4 weeks, was not far behind. The only other species of canned fish with any substantial use was sardines.

Six out of ten plants used tuna, varying from 42 percent in the South, to 81 percent in the West. Salmon, which was used by 44 percent of the plants in the country, as a whole, was consumed by about one-third of the western and southern plants and by more than one-half of the North Central plants. Sardines, used by an average of 13 percent, were most popular in the Northeast and least popular in the South. Plants with company-run facilities had the most users of each of the three kinds of canned fish.

Most of those buying canned tuna bought it in 4-pound cans or less. This was true of all sections of the country, plant sizes, and forms of operation. Of those which used larger cans, the majority were company-run facilities, and plants with 500 or more employees.

In general, pink or chum salmon was used by about 12 percent of the plants. In the South, it was about on a par with other species of salmon while in the Northeast only 3 percent used that product as against 40 percent using other species.

Canned fish formed the bulk of the inventory in factory food-service units in the amount of 282,000 pounds--a quantity sufficient to last for just over 6 weeks. In the South, the supply was ample for over 9 weeks. All other sections of the country had enough canned fish for more than 4 weeks.

Of all kinds of fish found in plant inventories, canned salmon (almost 150,000 pounds) accounted for the largest stock. Next was canned tuna. Supplies of canned salmon were adequate for just under 8 weeks, and of tuna 4-1/2 weeks.

Only 9 percent of plants that used canned fish were without any inventory at the time of the survey. About one-fourth had less than 25 pounds, and 28 percent had one-hundred pounds or more. The median average amount on hand was 54 pounds.

Shellfish

Shellfish used by plant feeding facilities during the 4-week period amounted to 202,039 pounds at a cost of $145,070. Almost half the total was used in plants located in the Northeast, and about three-fourths of the poundage was used by large plants. Services operated by contractors used somewhat more shellfish than company-run facilities, but the differences in their dollar volume was only slight, indicating a greater use by company services of the more expensive species.

Half the shellfish used in the survey period was fresh and approximately a third was frozen, with only 18 percent canned.

Plants with a thousand or more employees used the largest portion of shellfish in any form but used less than half as much canned as frozen shellfish. Both the medium-sized and small plants used larger percentages of canned than of fresh or frozen shellfish.

Between company versus contractor-run facilities, the use of fresh shellfish was equally divided; canned was almost as evenly split, but leased operations used a much greater proportion of frozen shellfish.

While about a fourth of all plants used shellfish in each form (fresh, frozen, and canned), there were marked geographic differences. In the West, 43 percent of the plants used canned shellfish, 30 percent frozen, and only 18 percent fresh. Quite opposite patterns of use were characteristic of the South, where one-third of the plants served fresh shellfish, 22 percent frozen, and only 10 percent canned. In the Northeast there was comparatively little variation by type of product.

Analyzed by plant size, 3 to 4 out of 10 large plants used all three types of product, with frozen showing up most often. About a fourth of the medium-sized companies used fresh shellfish; fewer used frozen or canned. Less than one in five small firms served canned, fresh, or frozen shellfish.

Slightly less than 35 pounds of shellfish were used in the average plant in the 4-week survey period. Almost one-half was fresh, while 11 pounds were frozen and 6 pounds were canned.

By far the greatest quantity of fresh shellfish was used in Northeastern plants--an average of 36 pounds. The west was heaviest in the use of canned products--19 pounds, almost twice as much as in the Northeast. North central and southern plants used very little canned shellfish products, i. e., 5 pounds and 1 pound, respectively.

Fresh and Frozen Shellfish.--Of 165,056 pounds of fresh and frozen shellfish used in plants in 4 weeks, 43 percent was shrimp, 22 percent scallops, 17-percent oysters, and 13 percent clams. Lobster and crabmeat made up almost all the remainder.

For the most part, the bulk of use of all the different species of shellfish was in large plants and in contractor operations. An important exception was found in scallops, three-fourths of which were used in company-run facilities.

A total inventory of about 7,000 pounds of fresh shellfish was reported on hand--as with fresh fish, only enough for 1-1/2 days' supply.

The opening inventory of frozen shellfish showed over 20,000 pounds, a 6.9 days' supply. This commodity was usually found in quantities sufficient for more than a week, and in plants with fewer than a thousand employees, the supplies were adequate for almost 2 weeks.

About 6 out of 10 users of frozen shellfish had an inventory of that commodity ranging from less than 5 pounds to more than 55 pounds. For plants which used frozen shellfish, the most usual quantities kept in inventory fell between 15 and 34 pounds.

Canned Shellfish.--Three-fourths of the total of the 36,983 pounds of canned shellfish used by factory food services was clams. This commodity accounted for 46 percent of the total dollar expenditure for canned shellfish. Canned crabmeat and shrimp were the only other items used to any great extent.

The northeastern plants lead in the use of canned clams with 42 percent of the total. Ninety-one percent of the canned crabmeat was used in the Northeast and plants in the North Central used 44 percent of the canned shrimp.

Canned shellfish was used in relatively few plants - 12 percent used canned clams, 6 percent shrimp, and only 5 percent crabmeat. Plants in the West showed the most frequent use. Southern firms were the smallest users of all three of these species of shellfish.

If only users are considered, the average (per plant) 4-week use was canned clams and shrimp, 14 pounds each; and crabmeat, 10 pounds.

As with canned fish, ample supplies of canned shellfish were in plant inventories - a total of 44,000 pounds. Only in the South and in small plants was there less than a 4-weeks' stock, and even in those two segments there was more than enough for a full working week. Contractor-run services had less on hand than those facilities operated by the company.

The majority (83 percent) of companies that used canned shellfish had some in stock. Almost one-fourth of all the

plants had less than 10 pounds on hand while 37 percent of the total volume of canned shellfish was used by 14 percent who had a hundred or more pounds in inventory.

CONDITIONS OF PURCHASE

A secondary wholesaler is the most important source for fish and shellfish, particularly among larger plants. Ninety percent of firms with one thousand or more employees named this type of supplier compared with three out of four medium-sized plants and only 66 percent of the small plants. Conversely, relatively more mention was made of retail stores by the smaller concerns, i. e., 16 percent of the companies with 250-499 employees and 12 percent of the middle-sized plants designated retail sources.

Primary wholesalers, processors and canners were also cited as sources for those products. Primary wholesalers were used by 9 percent of the small plants, 7 percent of the large, and only 4 percent of the medium-sized plants.

The majority of plants bought all their fresh or frozen fish products from a single firm. Where more than one supplier was patronized, it was more likely to be a large plant than a small one, and the chances were greater that it was located in the South or north-central region.

The average plant made four purchases of fresh or frozen fish during the survey period. In general, where the use of fish was highest, the number of purchases during the 4 weeks tended to be greatest. There was one exception to this rule--the West, which had the largest proportion of plants that used fresh or frozen fish, also had the highest percentage of companies making fewer than four purchases of that commodity during the survey period.

Personal inspection was the most frequent buying method for fresh fish and shellfish; 35 percent mentioned this practice. One in five plants bought on the basis of brand names.

With both frozen and canned fish the brand name was the most important consideration. Almost half the buyers mentioned this factor in connection with frozen fish and more than 6 out of 10 pointed to it as a determining element in canned fish purchases. About one in four buyers of frozen fishery products made a personal inspection.

PRINCIPAL PRODUCTS

Six of the principal fish and shellfish products were selected for more detailed analysis. For those six, the average amounts usually bought by plants were as follows:

	Average quantity purchased
	Pounds
Cod, fresh or frozen	35
Ocean perch, fresh or frozen	28
Salmon, canned	26
Tuna, canned	19
Haddock steaks and fillets, fresh or frozen	19
Shrimp, peeled, fresh or frozen	14

Cod

The size of purchase for cod ranged from less than 10 pounds to more than 160 pounds. All of the really sizeable purchases (80 pounds or more) were made by companies with 500 or more workers. Approximately half of the total used was accounted for by plants that usually bought 60 pounds or more at a time. Altogether, 34 percent of the large plants purchased in quantities of this magnitude, as contrasted with less than 20 percent of the small and medium-sized plants.

In four weeks, almost 88,000 pounds of cod (10 percent of the total volume of fish and shellfish) were used by manufacturing-plant food facilities in the United States. A third of the transactions, and almost half the volume was at or within a few cents of the average price of 34 cents a pound. Eighty-five percent of the transactions were within a range of 10 cents below or 10 cents above the average.

In all sections of the country, steaks and fillets were bought by more plants than was whole or dressed cod.

The average quantity of cod steaks or fillets used per plant was about 11 pounds compared with 4 pounds of whole or dressed cod. A larger proportion of north-central firms bought whole or dressed cod than elsewhere, but even here, not quite so many bought them as steaks or fillets.

Haddock

The average quantity of fresh and frozen haddock steaks and fillets used per plant was almost 11 pounds. (In addition an average of 10 pounds of whole and dressed haddock was used per plant). The fresh and frozen steaks and fillets accounted for about 7 percent of the total poundage of fish and shellfish used during the survey period. The average price for those items was 41 cents per pound but it was reported as low as 24 cents and as high as 70 cents. The major share of both the number of transactions and the total volume fell between 30 cents and 44 cents a pound.

Fifty-three percent of the small companies bought less than 10 pounds of haddock steaks or fillets at a time. In the medium-sized plants, however, the most customary order was between 10 and 19 pounds while half the large companies usually bought between 20 and 39 pounds. Not a single small plant bought as much as 40 pounds at a time, but half the total consumption was accounted for by large and medium-size plants that bought 40 or more pounds.

Ocean perch

This commodity, with over 70,000 pounds used in 4 weeks, constituted 8 percent of the total fish and shellfish volume. It was one of the lowest-priced species of fish, averaging 33 cents per pound. The average quantity used per plant was 12 pounds. About 50 percent of the plants used a total of less than 60 pounds during the survey period. While 16 percent used 200 or more pounds, most of them were in the 200- to 299 pound range.

In small plants, the quantity of ocean perch bought ranged from under 10 to 49 pounds, with the largest proportion buying between 10 and 19 pounds. Firms with 500 or more employee sometimes went as high as 160 or more pounds in a single purchase. A third of the volume was used by plants that usually bought a hundred or more at a time.

Canned salmon

Approximately 9 percent of the total 4-week use of fishery products was in canned salmon.

The most usual procedure for buying canned salmon was in quantities of between 20 and 49 pounds. More than half the small (51 percent) and about two-thirds of the medium- and large-sized firms dealt in such sizes. A fifth of the total volume used was by plants buying in lots of 50 pounds or more.

Twenty-four percent of the transactions for this item were for 1-pound cans, and a similar proportion was in cases of 24 1-pound cans. One-third were in cases of 48 1-pound cans.

Salmon in pound cans ranged in price from 30 cents to over 75 cents, averaging 56 cents a pound. Over half the transactions in this size unit and two-thirds of the volume fell between 45 cents and 59 cents; 6 percent of the transactions and 10 percent of total quantity used resulted from purchases at 75 cents or more a pound.

In cases of 24 1-pound cans of salmon, transactions were found all the way from $8.88 a case to $22.20 with a $13.00 (55 cents a pound) average. Around a third of the purchases were between $12.00 and $13.99 a case.

Canned tuna

Canned tuna accounted for about 10 percent of the 4-week use of fishery products. Prices differed considerably by the size of the unit purchased. In all, 26 different purchase units were mentioned. Most popular were 13- to 14-ounce cans, in 24-unit cases. The same size in cases of 48 accounted for 9 percent of the purchases, as did cases of six 4-pound cans.

More than half of both the small and the medium-sized plants usually bought less than 20 pounds of canned tuna at a

time, while 28 percent of the large plants bought from 30 to 49 pounds, and 10 percent bought 50 or more pounds.

Tuna bought in cases of six 4-pound cans ranged in price from 41 cents a pound to 68 cents, averaging 57 cents. Tuna in cases of 24 13- to 14-ounce cans was reported from a low of 45 cents a pound to 71 cents averaging 62 cents.

Peeled shrimp

Fresh or frozen peeled shrimp amounted to 49,000 pounds or 6 percent of the total fish and shellfish volume used during the survey period. Regionally, the use of shrimp varied only from 27 to 33 percent.

Shrimp had the highest average use (eight pounds) for any single species of fresh or frozen shellfish. Together the use of peeled and in-shell shrimp was twice as much, on an average basis, as that of any other kind of shellfish. While the average consumption in user plants was 35 pounds, a fifth of the plants used less than 10 pounds each. On the other hand, one-fourth of the total use was in 4 percent of the plants where each used 200 or more pounds.

Purchases of this product tended to be somewhat smaller than those of the other kinds analyzed. Better than half (58 percent) of the small firms, and 33 and 37 percent, respectively, of the medium-sized and large plants usually bought less than 10 pounds. A relatively large proportion of the plants with 500-999 workers bought in quantities of 70 pounds or more.

STATISTICAL TABLES

(Note: In some instances the detailed data do not add to stated totals because of rounding to the nearest whole number.)

TABLE - 1.--AGGREGATE QUANTITY OF FISH AND SHELLFISH USED IN 4 WEEKS, JANUARY - FEBRUARY 1956

Region, employee size group, and form of operation	Total fish and shellfish		Fish		Shellfish	
	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars
All plants	884,067	454,957	682,028	309,887	202,039	145,070
Region:						
Northeast	308,577	165,936	209,242	100,123	99,335	65,813
North Central	370,063	187,282	318,940	147,488	51,122	39,793
South	161,287	76,554	122,874	46,208	38,414	30,347
West	44,140	25,185	30,972	16,068	13,168	9,117
Employee size group:						
250 - 499	82,026	49,805	66,277	37,044	15,749	12,760
500 - 999	188,650	93,719	149,199	65,879	39,451	27,840
1,000 or more	613,391	311,433	466,552	206,964	146,839	104,470
Form of operation:						
Company-operated	400,541	215,148	307,113	144,500	93,429	70,648
Contractor-operated	483,526	239,809	374,915	165,387	108,610	74,422

TABLE - 2.--PERCENTAGE OF PLANTS USING FISH AND SHELLFISH AND AVERAGE QUANTITY USED PER PLANT IN 4 WEEKS, JANUARY - FEBRUARY 1956

Region, employee size group, and form of operation	Average plant size (count of employees)	Total fish and shellfish	Fish					Shellfish			
			Total	Fresh	Frozen	Canned	Cured, dried, smoked kippered 1/	Total	Fresh	Frozen	Canned
PLANTS USING	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
All plants	1,537	85.4	85.1	31.7	49.3	72.5	4.1	52.0	24.9	25.4	21.9
Region:											
Northeast	1,254	91.9	91.9	38.7	36.3	80.7	8.2	64.0	31.1	25.3	35.2
North Central	2,013	86.1	86.1	30.7	55.9	73.4	1.5	45.6	16.1	26.5	16.4
South	1,105	74.8	73.6	25.3	52.9	58.0	4.7	46.9	33.6	22.4	9.6
West	1,481	91.8	91.8	29.6	53.7	84.0	(2)	56.4	18.2	30.3	42.9
Employee size group:											
250 - 499	353	74.0	74.0	26.0	31.4	60.0	1.6	40.1	15.8	17.1	19.2
500 - 999	699	83.9	83.0	28.8	52.2	72.6	5.0	44.4	25.7	20.9	17.3
1,000 or more	3,441	97.3	97.3	39.7	63.0	83.8	5.6	70.3	32.4	37.5	28.9
Form of operation:											
Company-operated	1,181	94.6	93.8	34.7	55.5	80.5	4.4	63.5	29.8	28.7	28.7
Contractor-operated	1,743	80.2	80.2	29.9	45.8	68.0	4.0	45.5	22.1	23.5	18.1
QUANTITY USED PER PLANT	Number	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
All plants	1,537	150.70	116.26	31.94	51.45	31.27	1.60	34.44	17.04	11.10	6.30
Region:											
Northeast	1,254	179.41	121.65	36.80	40.27	39.75	4.84	57.75	35.62	11.93	10.20
North Central	2,013	157.54	135.78	37.19	64.28	34.21	.11	21.76	7.15	10.07	4.54
South	1,105	113.01	86.09	19.90	47.63	18.00	.57	26.92	13.51	12.24	1.16
West	1,481	119.17	83.62	22.58	36.69	24.35	(2)	35.55	7.03	9.27	19.25
Employee size group:											
250 - 499	353	44.00	35.55	7.86	9.88	17.72	.10	8.45	3.47	2.09	2.88
500 - 999	699	95.66	75.65	19.65	34.58	21.03	.40	20.00	9.04	6.34	4.63
1,000 or more	3,441	302.10	229.78	65.99	106.00	53.65	4.14	72.32	37.27	23.98	11.07
Form of operation:											
Company-operated	1,181	188.69	144.68	36.97	61.33	42.93	3.45	44.01	23.65	11.75	8.62
Contractor-operated	1,743	129.15	100.14	29.10	45.84	24.65	.55	29.01	13.29	10.73	4.99

1/ Includes small quantities of items as dried codfish, kippered herring, and smoked salmon.
2/ Less than 0.05 percent or 0.005 pounds.

TABLE - 3.--AGGREGATE QUANTITY OF FISH, BY TYPE OF PRODUCT, USED IN 4 WEEKS, JANUARY - FEBRUARY 1956

Region, employee size group, and form of operation	Total		Fresh		Frozen		Canned		Cured	
	Thousand pounds	Percent	Thousand pounds	Percent	Thousand pounds	Percent	Thousand pounds	Percent	Thousand pounds	Percent
All plants	682.0	100	187.4	100	301.8	100	183.4	100	9.4	100
Region:										
Northeast	209.2	31	63.3	34	69.2	23	68.4	37	8.3	88
North Central	318.9	47	87.3	47	151.0	50	80.3	44	.3	3
South	122.9	18	28.4	15	68.0	23	25.7	14	.8	9
West	31.0	4	8.4	4	13.6	4	9.0	5	-	-
Employee size group:										
250 - 499	66.3	10	14.7	8	18.4	6	33.0	18	.2	2
500 - 999	149.2	22	38.7	21	68.2	23	41.5	23	.8	9
1,000 or more	466.5	68	134.0	71	215.2	71	108.9	59	8.4	89
Form of operation:										
Company-operated	307.1	45	78.5	42	130.2	43	91.1	50	7.3	78
Contractor-operated	374.9	55	108.9	58	171.6	57	92.3	50	2.1	22

TABLE - 4.--AGGREGATE QUANTITY OF FRESH AND FROZEN FISH USED IN 4 WEEKS, JANUARY - FEBRUARY 1956

Species	Quantity	Value
	Pounds	Dollars
Haddock	123,798	49,193
Cod	87,622	29,534
Ocean perch	70,543	23,573
Halibut	38,444	18,029
Flounder or sole	23,377	11,268
Pike	21,660	13,996
Salmon	12,728	7,309
Swordfish	12,033	6,983
Unspecified fillets	17,619	8,258
Fish sticks	12,799	6,047
Other 1/	68,593	26,930
Total fresh and frozen fish	489,216	201,120

1/ Includes small quantities of mackerel, red snapper, rock and ling cod, sea and lake trout, sea bass, smelts, whiting, and similar items.

TABLE - 5.--PERCENTAGE OF PLANTS USING FRESH AND FROZEN FISH AND AVERAGE QUANTITY USED PER PLANT IN 4 WEEKS, JANUARY - FEBRUARY 1956

Region, employee size group, and form of operation	Average plant size (count of employees)	Total fish, fresh and frozen	Cod 1/			Flounder or sole			Haddock		
			Total	Steaks and fillets	Whole and dressed	Total	Fillets	Whole and dressed	Total	Steaks and fillets	Whole and dressed
	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
PLANTS USING											
All plants	1,537	69.3	18.1	11.9	6.1	8.6	5.9	2.7	24.8	10.5	15.1
Region:											
Northeast	1,254	64.5	13.4	11.6	1.8	15.8	11.7	4.1	32.9	17.6	17.6
North Central	2,013	77.2	26.1	15.0	11.1	4.3	2.7	1.5	22.3	7.2	15.1
South	1,105	62.8	15.1	10.4	4.7	5.2	1.5	3.7	22.6	7.5	15.1
West	1,481	67.2	(3)	(3)	(3)	15.6	15.6	(3)	11.3	9.9	2.6
Employee size group:											
250 - 499	353	48.9	8.7	4.5	4.2	8.2	5.6	2.6	13.8	6.7	7.1
500 - 999	699	68.0	15.4	10.6	4.8	6.4	4.5	1.9	25.1	11.5	15.2
1,000 or more	3,441	89.3	29.3	20.1	9.2	11.1	7.5	3.6	34.5	13.0	22.2
Form of operation:											
Company-operated	1,181	77.1	17.9	15.7	2.2	10.2	6.5	3.7	25.7	12.2	15.2
Contractor-operated	1,743	64.9	18.2	9.8	8.4	7.7	5.5	2.1	24.2	9.5	15.0
	Number	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
QUANTITY USED PER PLANT											
All plants	1,537	83.39	14.94	10.49	4.45	3.98	2.53	1.45	21.10	10.66	10.44
Region:											
Northeast	1,254	77.07	12.51	12.00	.50	6.82	5.94	.87	32.09	21.84	10.25
North Central	2,013	101.46	18.84	11.57	7.27	3.28	1.19	2.08	21.72	8.21	13.51
South	1,105	67.52	15.32	9.60	5.72	1.63	.15	1.48	11.19	3.26	7.94
West	1,481	59.27	(3)	(3)	(3)	4.40	4.40	(3)	4.33	2.88	1.44
Employee size group:											
250 - 499	353	17.74	2.89	1.57	1.33	1.32	1.05	.27	3.16	1.03	2.13
500 - 999	699	54.23	10.11	5.85	4.26	1.41	.90	.51	19.85	14.20	5.66
1,000 or more	3,441	171.99	30.68	23.18	7.51	8.93	5.48	3.45	38.79	16.08	22.71
Form of operation:											
Company-operated	1,181	98.30	17.63	16.37	1.25	5.27	2.23	3.04	23.73	14.10	9.62
Contractor-operated	1,743	74.94	13.41	7.15	6.26	3.26	2.71	.55	19.62	8.72	10.90

See footnotes at end of table.

TABLE - 5.--PERCENTAGE OF PLANTS USING FRESH AND FROZEN FISH AND AVERAGE QUANTITY USED PER PLANT IN 4 WEEKS, JANUARY - FEBRUARY 1956 - Continued

Region, employee size group, and form of operation	Average plant size (count of employees)	Halibut			Ocean perch	Pike	Salmon	Sword-fish	Fish fillets, not specified as to kind	Fish sticks	Other 2/
		Total	Steaks and fillets	Whole and dressed							
	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
PLANTS USING											
All plants	1,537	11.7	2.8	9.0	17.7	4.7	5.3	2.6	3.8	7.0	20.1
Region:											
Northeast	1,254	9.4	1.7	7.6	7.6	3.5	4.7	6.5	2.9	8.2	12.9
North Central	2,013	14.4	2.5	11.8	21.2	9.3	6.3	1.0	5.9	7.1	18.9
South	1,105	5.9	1.2	4.7	28.2	(3)	1.5	(3)	2.0	4.7	25.0
West	1,481	27.3	14.8	13.8	2.1	(3)	16.0	4.0	1.3	10.4	42.6
Employee size group:											
250 - 499	353	7.9	2.1	5.7	7.2	1.6	5.4	1.6	1.6	2.5	13.1
500 - 999	699	7.7	2.2	5.5	17.3	2.5	.5	1.7	5.1	10.0	14.5
1,000 or more	3,441	19.0	3.9	15.3	27.8	9.8	9.7	4.2	4.5	8.4	32.0
Form of operation:											
Company-operated	1,181	17.4	5.5	12.1	21.3	5.9	4.7	2.5	1.2	10.0	21.9
Contractor-operated	1,743	8.4	1.2	7.2	15.7	4.1	5.6	2.6	5.3	5.4	19.2
	Number	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
QUANTITY USED PER PLANT											
All plants	1,537	6.55	1.72	4.84	12.02	3.69	2.17	2.05	3.00	2.18	11.69
Region:											
Northeast	1,254	4.39	2.23	2.17	4.09	1.24	1.51	6.18	.52	1.88	5.85
North Central	2,013	7.09	1.58	5.51	18.33	8.31	2.42	.30	6.42	2.87	11.88
South	1,105	6.07	.18	5.89	14.14	(3)	.56	(3)	.81	1.12	16.69
West	1,481	15.01	6.11	8.91	.75	(3)	9.85	1.89	1.35	3.29	18.40
Employee size group:											
250 - 499	353	1.23	.28	.95	2.43	.41	.75	.49	.38	.42	4.26
500 - 999	699	4.05	.93	3.12	5.31	1.50	.53	.62	1.31	2.21	7.33
1,000 or more	3,441	13.87	3.80	10.07	27.35	8.83	5.07	4.88	7.06	3.76	22.76
Form of operation:											
Company-operated	1,181	12.16	3.87	8.29	17.12	3.03	1.16	1.38	.33	3.48	13.02
Contractor-operated	1,743	3.37	.49	2.88	9.14	4.07	2.74	2.43	4.52	1.45	10.94

1/ Excludes rock and ling cod.

2/ Includes small quantities of mackerel, red snapper, rock and ling cod, sea and lake trout, sea bass, smelts, whiting, and similar items.

3/ Less than 0.05 percent or 0.005 pounds.

TABLE - 6.--QUANTITY OF FISH AND SHELLFISH
AND NUMBER OF DAYS SUPPLY IN INVENTORY
AT BEGINNING OF SURVEY JANUARY - FEBRUARY 1956

Type of product	Daily use 1/	On hand	Number of working days' supply
	Thousand pounds	Thousand pounds	Days
Total fish and shellfish	40.2	434.6	10.8
Fish: Total	31.0	362.7	11.7
Fresh	8.5	12.9	1.5
Frozen	13.7	63.3	4.6
Canned	8.4	281.9	33.6
Cured, smoked, dried, kippered	.4	4.6	11.5
Shellfish: Total	9.2	71.9	7.8
Fresh	4.5	7.1	1.6
Frozen	3.0	20.8	6.9
Canned	1.7	44.0	25.9

1/ On basis of average work week of 5.5 days.

TABLE - 7.--PERCENTAGE OF PLANTS HAVING 0° F. FREEZER SPACE, BY CAPACITY 1/

Region, employee size group, and form of operation	Plants without 0° F. freezer space	Plants with 0° F. freezer space	Capacity in cubic feet						Median
			1 to 10	11 to 25	26 to 50	51 to 100	101 or more	Not ascertained	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Cubic feet
All plants	24	76	25	19	10	5	13	4	21
Region:									
Northeast	35	65	24	15	11	3	8	4	19
North Central	22	78	21	23	12	5	15	2	22
South	23	77	32	15	6	8	10	6	17
West	19	81	26	26	4	4	19	2	19
Employee size group:									
250 - 499	33	67	35	12	4	6	9	1	10
500 - 999	28	72	26	22	10	4	6	4	18
1,000 or more	15	85	16	22	15	5	21	6	37
Form of operation:									
Company-operated	21	79	20	21	9	8	16	5	22
Contractor-operated	26	74	28	18	10	5	10	3	19

1/ Freezer space used for foods other than ice cream.

TABLE - 8.--CHANGES IN 0° F. FREEZER SPACE

PLANNED BY PLANTS HAVING SUCH SPACE

Region, employee size group, and form of operation	Plan to increase	Plan no changes	Not ascer-tained
	Percent	Percent	Percent
All plants	18	71	11
Region:			
Northeast	27	67	6
North Central	15	70	15
South	17	72	11
West	13	79	8
Employee size group:			
250 - 499	28	61	11
500 - 999	10	82	8
1,000 or more	18	68	14
Form of operation:			
Company-operated	16	72	12
Contractor-operated	19	70	11

TABLE - 9.--AGGREGATE QUANTITY OF CANNED FISH USED IN 4 WEEKS, JANUARY - FEBRUARY 1956

Species	Pounds	Percent of total	Dollars	Percent of total
Tuna	88,361	48	53,173	51
Salmon	76,416	42	41,842	40
Sardines	12,249	7	7,093	7
Bonito	3,688	2	1,497	1
Other 1/	2,716	1	1,534	1
Total canned fish	183,430	100	105,139	100

1/ Includes small quantities of anchovies, codfish, haddock and similar items.

TABLE - 10.--PERCENTAGE OF PLANTS USING CANNED FISH AND SHELLFISH AND AVERAGE QUANTITY USED PER PLANT IN 4 WEEKS, JANUARY - FEBRUARY 1956

Region, employee size group, and form of operation	Average plant size (count of employees)	Total canned fish and shellfish	Fish, canned							
			Total fish	Bonito	Salmon			Sardines		
					Total	Pink or chum	Other	Total	3-3/4 oz. can or less	More than 3-3/4 oz. can
	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
PLANTS USING										
All plants	1,537	73.6	72.5	4.7	44.2	11.7	33.7	13.3	10.3	3.4
Region:										
Northeast	1,254	81.3	80.7	6.4	43.3	2.9	40.4	20.0	14.1	7.0
North Central	2,013	74.4	73.4	5.3	51.9	15.0	39.4	11.5	10.4	1.0
South	1,105	59.2	58.0	2.7	36.2	17.4	18.8	8.2	5.4	2.7
West	1,481	87.5	84.0	(1)	30.2	9.5	23.7	14.3	10.9	4.8
Employee size group:										
250 - 499	353	60.0	60.0	4.1	38.0	8.6	30.6	7.2	7.2	(1)
500 - 999	699	73.5	72.6	2.5	37.1	11.2	26.4	9.9	7.1	2.9
1,000 or more	3,441	86.1	83.8	7.3	56.7	14.9	43.5	22.3	16.3	7.2
Form of operation:										
Company-operated	1,181	80.9	80.5	5.5	55.0	14.1	44.2	16.5	13.3	3.4
Contractor-operated	1,743	69.4	68.0	4.2	38.0	10.3	27.7	11.6	8.7	3.4
	Number	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
QUANTITY USED PER PLANT										
All Plants	1,537	37.57	31.27	.63	13.03	3.39	9.64	2.09	1.54	.55
Region:										
Northeast	1,254	49.95	39.75	.81	11.46	.47	10.98	2.58	1.00	1.58
North Central	2,013	38.74	34.21	.51	18.12	5.41	12.71	2.59	2.52	.07
South	1,105	19.16	18.00	.76	8.94	4.38	4.56	.39	.27	.12
West	1,481	43.60	24.35	(1)	3.74	.31	3.44	3.17	2.68	.49
Employee size group:										
250 - 499	353	20.60	17.72	.13	5.59	1.20	4.39	.30	.30	(1)
500 - 999	699	25.66	21.03	.60	8.95	1.83	7.12	.80	.65	.16
1,000 or more	3,441	64.72	53.65	1.12	23.81	6.91	16.90	4.98	3.54	1.44
Form of operation:										
Company-operated	1,181	51.56	42.93	.64	21.21	4.09	17.12	2.26	1.46	.79
Contractor-operated	1,743	29.64	24.65	.62	8.38	2.99	5.39	1.99	1.58	.41

1/ Less than 0.05 percent or 0.005 pounds.

TABLE - 10.--PERCENTAGE OF PLANTS USING CANNED FISH AND SHELLFISH AND AVERAGE QUANTITY USED PER PLANT IN 4 WEEKS, JANUARY - FEBRUARY 1956 - Continued

Region, employee size group, and form of operation	Average plant size (count of employees)	Fish, canned - Continued				Shellfish, canned				
		Tuna			Other 1/	Total shellfish	Clams 2/	Crabmeat	Shrimp	Other 3/
		Total	4 lb. can or less	More than 4 lbs.						
PLANTS USING	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
All plants	1,537	60.9	50.2	14.2	4.7	21.9	12.3	5.1	5.8	4.5
Region:										
Northeast	1,254	72.5	59.6	18.8	8.8	35.2	16.4	12.9	9.4	11.8
North Central	2,013	60.5	49.5	14.1	3.2	16.4	11.3		4.7	.5
South	1,105	42.1	35.4	7.4	3.3	9.6	2.7	2.5	3.7	2.0
West	1,481	81.4	67.9	20.4	(4)	42.9	37.3	10.7	4.8	6.1
Employee size group:										
250 - 499	353	53.1	48.0	8.4	4.6	19.2	9.0	3.9	8.6	4.9
500 - 999	699	60.9	50.2	12.9	5.0	17.3	8.4	9.2	4.0	3.0
1,000 or more	3,441	68.0	52.3	20.9	4.4	28.9	19.2	2.1	5.0	5.7
Form of operation:										
Company-operated	1,181	66.3	49.0	23.5	9.0	28.7	15.9	9.1	10.9	5.7
Contractor-operated	1,743	57.8	50.9	9.0	2.2	18.1	10.3	2.8	2.9	3.8
QUANTITY USED PER PLANT	Number	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
All plants	1,537	15.06	8.51	6.55	.46	6.30	4.70	.56	.46	.58
Region:										
Northeast	1,254	23.57	12.37	11.20	1.32	10.20	6.81	1.77	.44	1.18
North Central	2,013	12.88	7.22	5.66	.11	4.54	3.75	(4)	.51	.27
South	1,105	7.78	5.71	2.07	.12	1.16	.54	.04	.49	.09
West	1,481	17.44	9.54	7.89	(4)	19.25	16.98	.45	.12	1.70
Employee size group:										
250 - 499	353	11.57	6.61	4.96	.13	2.88	1.30	.67	.41	.50
500 - 999	699	10.06	7.32	2.74	.62	4.63	3.29	.71	.40	.23
1,000 or more	3,441	23.13	11.41	11.72	.62	11.07	9.20	.31	.57	1.00
Form of operation:										
Company-operated	1,181	17.84	6.90	10.94	.98	8.62	5.63	1.05	1.02	.92
Contractor-operated	1,743	13.49	9.42	4.07	.17	4.99	4.18	.28	.15	.39

1/ Includes small quantities of anchovies, codfish, haddock, and similar items. 2/ Includes small quantity of clam juice. 3/ Includes small quantities of items as canned lobster tails, scallops, and oysters. 4/ Less than 0.05 percent or 0.005 pounds.

TABLE - 11.--AGGREGATE QUANTITY OF SHELLFISH USED IN 4 WEEKS, JANUARY - FEBRUARY 1956

Region, employee size group, and form of operation	Aggregate quantity used					
	Fresh		Frozen		Canned	
	Thousand pounds	Percent	Thousand pounds	Percent	Thousand pounds	Percent
All plants	100.0	100	65.0	100	37.0	100
Region:						
Northeast	61.3	61	20.5	31	17.5	48
North Central	16.8	17	23.6	37	10.7	29
South	19.3	19	17.5	27	1.7	4
West	2.6	3	3.4	5	7.1	19
Employee size group:						
250 - 499	6.5	6	3.9	6	5.4	15
500 - 999	17.8	18	12.5	19	9.1	24
1,000 or more	75.7	76	48.7	75	22.5	61
Form of operation:						
Company-operated	50.2	50	24.9	38	18.3	49
Contractor-operated	49.8	50	40.2	62	18.7	51

TABLE - 12.--AGGREGATE QUANTITY OF FRESH AND FROZEN SHELLFISH, BY SPECIES, USED IN 4 WEEKS, JANUARY - FEBRUARY 1956

Species	Aggregate quantity used			
	Pounds	Percent	Dollars	Percent
Shrimp	71,772	43	59,774	49
Scallops	35,947	22	24,122	20
Oysters	28,190	17	22,690	18
Clams	20,632	13	5,400	4
Lobsters	5,173	3	7,489	6
Crabs	3,193	2	3,443	3
Other	149	(1)	116	(1)
Total fresh and frozen shellfish	165,056	100	123,034	100

1/ Less than 0.5%

TABLE - 13.--AGGREGATE QUANTITY OF FRESH AND FROZEN SHELLFISH USED IN 4 WEEKS, JANUARY - FEBRUARY 1956

Region, employee size group, and form of operation	Species					
	Shrimp	Scallops	Oysters	Clams	Lobsters	Crabmeat
	Thousand pounds	Thousand pounds	Thousand pounds	Thousand pounds	Thousand pounds	Thousand pounds
All plants	71.8	35.9	28.2	20.6	5.2	3.2
Region:						
Northeast	18.6	30.9	10.6	18.1	2.1	1.4
North Central	31.0	3.9	2.4	1.1	2.1	.1
South	18.0	.9	14.5	1.0	.8	1.4
West	4.2	.2	.7	.4	.2	.3
Employee size group:						
250 - 499	4.3	1.8	1.5	2.3	-	.4
500 - 999	11.3	2.8	10.3	3.2	1.9	.8
1,000 or more	56.2	31.3	16.4	15.1	3.3	2.0
Form of operation:						
Company-operated	25.9	26.6	11.4	7.7	2.5	1.0
Contractor-operated	45.9	9.3	16.8	12.9	2.7	2.2

TABLE - 14.--PERCENTAGE OF PLANTS USING FRESH AND FROZEN SHELLFISH AND AVERAGE QUANTITY USED PER PLANT IN 4 WEEKS, JANUARY - FEBRUARY 1956

Region, employee size group, and form of operation	Average plant size (count of employees)	Total fresh and frozen shellfish 1/	Clams		Crabmeat	Lobsters	Oysters 3/	Scallops 3/	Shrimp		
			Total 2/	In-shell					Total	Peeled	In-shell
	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
PLANTS USING											
All plants	1,537	41.8	6.8	4.9	5.9	3.6	15.2	9.0	30.0	23.8	8.1
Region:											
Northeast	1,254	44.6	17.7	14.1	8.8	5.9	15.2	18.2	27.1	24.1	4.2
North Central	2,013	37.9	2.6	1.5	1.1	3.7	8.3	7.8	33.3	28.1	6.8
South	1,105	46.2	2.0	.7	10.4	.7	26.3	1.5	27.7	14.0	15.1
West	1,481	36.4	1.3	(4)	4.8	2.6	15.6	3.5	32.2	32.2	7.8
Employee size group:											
250 - 499	353	27.4	4.9	4.9	3.3	(4)	8.0	5.9	17.9	15.1	3.4
500 - 999	699	37.5	4.8	4.8	6.2	2.7	18.7	5.0	23.1	17.5	5.6
1,000 or more	3,441	59.1	10.5	5.1	7.9	7.6	18.3	15.8	47.9	37.8	14.9
Form of operation:											
Company-operated	1,181	50.5	6.1	4.1	7.1	4.9	22.3	10.1	30.5	26.1	5.1
Contractor-operated	1,743	36.9	7.2	5.4	5.1	2.8	11.1	8.4	29.7	22.4	9.8
	Number	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
QUANTITY USED PER PLANT											
All plants	1,537	28.13	3.52	2.57	.54	.88	4.81	6.13	12.23	8.41	3.83
Region:											
Northeast	1,254	47.55	10.53	8.07	.84	1.22	6.15	17.97	10.84	9.80	1.05
North Central	2,013	17.23	.45	.30	.02	.88	1.03	1.67	13.18	8.38	4.80
South	1,105	25.76	.72	.35	1.01	.55	10.18	.66	12.58	6.54	6.04
West	1,481	16.30	1.20	(4)	.68	.60	1.78	.46	11.37	9.32	2.05
Employee size group:											
250 - 499	353	5.56	1.26	1.13	.21	(4)	.81	.98	2.31	1.51	.80
500 - 999	699	15.38	1.63	1.63	.42	.95	5.22	1.41	5.70	4.24	1.46
1,000 or more	3,441	61.25	7.42	4.81	.97	1.63	8.07	15.44	27.69	18.78	8.90
Form of operation:											
Company-operated	1,181	35.39	3.63	2.27	.48	1.17	5.36	12.54	12.22	9.10	3.12
Contractor-operated	1,743	24.02	3.46	2.74	.58	.72	4.49	2.49	12.24	8.01	4.23

1/ Includes small quantity of abalone not shown separately. 2/ Includes small quantities of shucked clams.
3/ Includes small quantities in-shell. 4/ Less than 0.05 percent or 0.005 pounds.

TABLE - 15.--AGGREGATE QUANTITY OF CANNED SHELLFISH USED IN 4 WEEKS, JANUARY - FEBRUARY 1956

Species	Pounds	Percent of total	Dollars	Percent of total
Clams	27,587	75	10,068	46
Crabs	3,270	9	4,221	19
Shrimp	2,706	7	3,315	15
Other 1/	3,420	9	4,432	20
Total canned shellfish	36,983	100	22,036	100

1/ Includes small quantities of items as lobster tails, scallops and oysters.

TABLE - 16.--TYPE OF SUPPLIER OF FISHERY PRODUCTS BY PLANT SIZE 1/

Supplier	All plants	250 - 499	500 - 999	1,000 or more
	Percent	Percent	Percent	Percent
Secondary wholesaler	79	66	80	90
Retail store	11	16	12	4
Primary wholesaler	7	9	4	7
Processor	4	4	4	5
Canner	3	4	5	1
Not ascertained	3	5	3	-

1/ Percentages add to more than 100 because of multiple answers.

TABLE - 17.--NUMBER OF FISH PURCHASES IN 4 WEEKS, JANUARY - FEBRUARY 1956

Region, employee size group, and form of operation	Number of purchases		
	One to three	Four	Five or more
	Percent	Percent	Percent
All plants	27	63	10
Region:			
Northeast	15	71	14
North Central	27	62	11
South	37	57	6
West	44	49	7
Employee size group:			
250 - 499	34	58	8
500 - 999	30	62	8
1,000 or more	19	67	14
Form of operation:			
Company-operated	34	53	13
Contractor-operated	21	70	9

Appendix

SAMPLING AND SURVEY METHODOLOGY

The Universe From Which The Sample Was Selected

In general, the universe from which the sample was selected (for the entire series of publications) consisted of 28,146 manufacturing establishments which had 100 or more employees during the first quarter, 1953, according to the records of the Bureau of Old Age and Survivors Insurance (BOASI). Establishments which had fewer than 100 employees in 1953 or which were not in existence as of that date, and all non-manufacturing establishments, had a zero probability of inclusion in the sample, and are therefore not represented in the survey findings.

For the purposes of the "commodity reports", the survey was restricted to larger establishments, i. e., establishments with 250 or more employees in first quarter, 1953. Although basically the same procedure was used for sampling all establishments, certain refinements were introduced to improve the efficiency of the sample of establishments with 250 or more employees.

Design of the "Large Plant" Sample

The sampling method used for the "large plant" sample may be described as a self-weighting cluster sample, with clusters chosen for inclusion in the sample with probability proportional to size.

Prior to the selection of survey respondents, primary sampling units (psu's) were formed. Each psu was comprised of a single county, or a group of adjacent counties, with a minimum population of fifteen manufacturing establishments with 250 or more employees. Excluded from the universe (and from the sample) were nineteen "statewide" establishments; those with no fixed place of operation and which could not therefore be associated with a specific psu.

In total, 267 primary sampling units were formed, with a total population of 11,404 establishments. The remaining 470 establishments were in "unclustered counties" and were placed in a separate stratum. (A discrepancy of one establishment in the published BOASI statistics was ignored.)

The psu's and unclustered counties were stratified by four geographic regions. The number of psu's in each region, the population of these psu's, and the number of establishments in "unclustered counties" is as shown in the following:

Area	Number of psu's formed	Total establishments in psu's	Total establishments in unclustered counties
Northeast	75	4,161	0
North Central	92	4,067	107
South	81	2,353	280
West	19	823	83
All regions	267	11,404	470

The probability of the inclusion of any psu in the sample was proportional to the size of the psu measured in terms of numbers of establishments with 250 or more employees. Separately within each of the four geographic regions, a random start and a sampling interval were designated and a total of 50 primary sampling units were selected. In addition, counties were selected at random from the stratum of unclustered counties.

Several psu's, because their size exceeded the sampling interval, were selected more than once; this was true of the five counties in New York City (which are treated as a single unit by the BOASI), the psu made up of Cook and DuPage counties in Illinois, and the psu created from Los Angeles, Ventura, Orange, Kern, and Santa Barbara counties in California.

The establishments within each psu were divided into three strata on the basis of 1953 employee size: 250 to 499 employees, 500 to 999 employees, and 1,000 or more employees. For each stratum, a random start was selected and an interval determined which would provide a self-weighting sample. The actual selection of establishments in sample psu's

was done by the BOASI, from its complete listings of manufacturing establishments, in accordance with the pre-arranged specifications covering starting point and interval. All of the establishments in the seventeen unclustered counties were included in the sample.

The number of primary sampling units and counties included in the sample and the total number of establishments from which the final list of respondents was selected is shown in the following two tables:

Area	Psu's in sample	
	Number	Number of establishments
Northeast	17	1,654
North Central	16	1,920
South	11	504
West	6	457
All regions	50	4,535

Area	Unclustered counties in sample	
	Number	Number of establishments
Northeast	0	0
North Central	5	7
South	6	18
West	6	23
All regions	17	48

The sample, it will be noted, was disproportionate by both size and region. Specifically, all plants in the West were over sampled, and all plants with 1,000 or more employees were over sampled.

The end result of the sampling process was the identification of 892 establishments. The sample can be considered to adequately represent all manufacturing establishments which had 250 or more employees during first quarter 1953.

Telephone "Screening" Interviews

A telephone screening questionnaire designated the "T" interview was designed and used to establish the presence and nature of feeding facilities in establishments with 250 or more employees in 1953. Of the 892 establishments identified through the sampling process the "T" telephone interview was completed with 845. Interviews were conducted during late December, 1955 and early January, 1956, and the respondent was usually an individual in a personnel supervisory function.

There were 47 establishments with which a "T" interview was not completed. For the most part, the absence of an interview was the result of the establishment having gone out of business or having moved out of the sampling area.

Subsequently, 24 additional "T" interviews were completed with establishments selected on a systematic basis within certain psu's, where problems of non-cooperation in the collection of detailed food schedules made this desirable. In total, then, 869 "T" interviews were conducted.

Changes in Employment Size

Almost three years had elapsed between first quarter 1953, at which point in time these establishments were classified by employment size by the BOASI, and the early months of 1956, when actual interviewing was done. Presumably, some of these plants had gone out of business during the period. Others, on the other hand, had grown substantially in size.

Size of employment was also affected in another way. It will be remembered that the universe, and the sample, was defined in terms of "establishments". That is, a company operating at more than one location is required to submit a report for the "establishment" at each location; also, companies engaged in distinctly different lines of activity at one location are required to submit separate reports on each "establishment" if the activities are substantial in size. It follows from the latter that at any

single company location several "establishments" may be represented.

Feeding facilities, however, are rarely associated with a specific "establishment". Almost invariably, such facilities are made available to all employees at a given location of a company, even though some of these employees may be engaged in different activities than others, i.e., may be employed by different "establishments". It was therefore necessary to shift the frame of reference from "establishments" to "plants". A plant is defined as all of the manufacturing activities of a given company at a single well-defined location. (This definition is obviously subject to interpretation. In general, management's interpretation of the scope and size of a plant has been accepted.)

The number of employees at any specific plant location was obtained from companies originally contacted during the "T" interview and subsequently interviewed in person. An estimate of employment offered by a qualified representative of management at the time of the personal interview was accepted.

Subsequent Interviews With Feeding and Non-Feeding Plants

The "T" telephone interview was, as previously noted, primarily designed as a screening interview and its primary objective was to determine the incidence and nature of feeding facilities among 869 establishments with which such interviews were made.

Subsequent personal interviews with companies with 250 or more employees during the first quarter of 1956 were made with sub-samples of the 809 plants which had 250 or more employees in both 1956 and 1953. Four types of interviews were conducted with these establishments: An "A" interview with management of plants with feeding facilities; a "B" interview with the managers of feeding facilities in plants which have such facilities; an "R" schedule which collected information on inventories and purchases of food during a four week period; and a "C" interview with management of plants which did not have feeding facilities. (Complete findings of the "A", "B", and "C" interviews are shown in the first publication of the series entitled "In-Plant Feeding Facilities". Relevant subjects and passages from this report, however, are included in the "commodity reports".)

The "A" interviews with plant management covered a variety of topics. Principal among these were the reasons for establishing feeding facilities for employees, the advantages and disadvantages of maintaining these facilities, and their future plans with respect to feeding facilities. Information was also obtained on the characteristics of the employment and the availability of nearby public eating places, which were considered to be factors possibly related to the establishment of feeding facilities.

In the "B" questionnaire the primary emphasis was on the actual physical operation of the feeding facilities. Respondents were questioned on the types of facilities operated and the hours at which facilities were open to employees, the types of meals served, the existence of bakery and butcher shop facilities, etc. They were also questioned on their buying practices, their sources of supply, and the terms of purchase used.

Of the 343 plants without feeding facilities identified during the telephone screening operation, a systematic sample of 85 were selected for more intensive personal interviews. These interviews, designated the "C" questionnaire, had covered substantially the same ground as "A" interviews with management of plants with feeding facilities. That is, these interviews explored the attitude of plant management towards feeding facilities, their previous experience, if any, with feeding facilities and their future plans. In addition, information describing the characteristics of the plant and the availability of nearby public eating places was also explored.

As to the "R" questionnaires, all of the plants with which both "A" and "B" interviews had been completed (378 plants representing 390 establishments) were requested to make available information on their inventories of foods on hand on two dates, approximately 4 weeks apart, in January to February, 1956 and also on food purchases during this period. In a number

of instances this information was refused. In other instances it was found that the records of the food facilities were such that no accurate data could be obtained. As a result of these two situations, form "R" schedules were completed with 352 feeding facilities, in 350 plants. In two plants, two separate feeding facilities were audited. The 350 plants surveyed represented a total of 361 establishments.

Naturally, not all of the food schedules covered precisely the same period in time. For the typical or "median" facility, the initial inventory was taken January 10, 1956 and the closing inventory February 8, 1956. All food purchases of this period, approximately four calendar weeks, were recorded and food consumption calculated.

The average period covered for all facilities surveyed was 28.7 days. (These are calendar days and the number of working days covered is affected not only by the number of week-ends but also by the extent to which the plant may operate on a 5-1/2 or 6 day week.) A distribution of the number of calendar days covered in these schedules is as follows:

Less than 27 days	6.6%
27 days	32.5
28 days	18.5
29 days	9.8
30 days	15.4
31 days	7.7
32 or 33 days	6.5
More than 33 days	3.0

Weighting System

The companies with feeding facilities with which "R" questionnaires were completed were drawn from those companies which had been identified during telephone screening operations as having feeding facilities.

Also as mentioned earlier, the basic sample itself was disproportionate both by size and by region, and a weighting system was found necessary to restore to this sample the proportionality which existed in the universe. That is, the "T" interviews were stratified by size and region, and such weights assigned to each region-employee-size cell as would effect this restoration. This same need for weights extended to interviews made with sub-samples. Weights were also required to take into account the effect of refusals to cooperate during the survey. The 391 "A" plants, the 378 "B" plants, and the 350 "R" plants must all necessarily be considered samples drawn from the same universe (although biases are introduced by the failures to cooperate) and suitable weightings are needed in order to make valid comparisons of materials obtained in one questionnaire with material obtained during another.

The universe, as will be remembered, was originally defined in terms of "establishments" and in terms of the size of these establishments as this was reported to be BOASI in 1953. Since the sample was selected on this basis weights must also be calculated and applied on the same basis. However, it should be specfically noted that while weights are calculated on the basis of 1953 size of establishment, tabulations have been presented in terms of 1956 size of plant.

Generally speaking this procedure was followed: The universe with which the sample is associated was derived either from BOASI statistics, or, in the case of the universes of "plants with feeding facilities" calculated on the basis of telephone interviews. Then, a proportional sample was devised on a twelve-cell "geographic area by 1953 plant size" basis, so that the number of interviews in this proportional sample in each cell was a constant fraction of the universe of the establishments in the cell. The "proportionate sample" in each cell was then divided by the actual number of establishments interviewed in that cell. The result, extended two decimal places was the weight assigned to all establishments in the cell.

Since the sample plants were drawn from the same universe and in the same manner as the sample of "establishments", the same weights were applied to both.

Basis For Universe Projections

Data from the sample on food consumption in in-plant food services have been projected to indicate the magnitude of the total market for food in such facilities.

Naturally, these projections have

been made to the "universe" from which the sample was drawn; a universe which, as mentioned above, embraces only manufacturing plants with these characteristics:

1. At least one establishment with 250 or more employees in first quarter 1953;

2. At least 250 employees in early 1956;

3. That maintained employee food services in early 1956.

The universe to which projections have been made is not necessarily co-extensive with "all manufacturing plants which at present have more than 250 employees and have regular food services for employees". The sampling procedure, and information obtained during the survey, would clearly suggest that the universe to which projections have been made--and the projections themselves--to some extent understate the actual situation. However, the precise degree of understatement cannot be measured; and lacking this information, no attempt has been made to "adjust" the survey results to eliminate this source of statistical bias. The reader is nevertheless cautioned that this situation exists.

COMPOSITION OF THE UNIVERSE TO WHICH PROJECTIONS HAVE BEEN MADE

Characteristic	Number plants with food facilities
Region:	
Northeast	1,720
North Central	2,349
South	1,427
West	370
1956 employee size group:	
250 - 499	1,864
500 - 999	1,972
1,000 or more	2,030
United States total	5,866

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